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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGHIEM, MICHAEL P

ART UNIT	PAPER NUMBER
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2863

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/655,985

Applicant(s)

ZHU ET AL.

Examiner

Michael P. Nghiem

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 and 14 is/are allowed.
- 6) ☒ Claim(s) 1,2,4,7,10,15,16 and 19 is/are rejected.
- 7) ☒ Claim(s) 3,5,6,8,9,11,12,17,18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-3-05.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

The Amendment filed on March 17, 2005 has been acknowledged.

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321[□] may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 10 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3, 13, and 14 of copending Application No. 10/458,716 (Daniels et al., US 2004/0083794). Although the conflicting claims are not identical, they are not patentably distinct from each other because Daniels et al. anticipates the claimed invention:

"A method of detecting an open secondary winding, comprising the step of measuring spark duration (claims 1, 3, 13, 14)."

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 7, 10, 15, 16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Daniels et al. (US 2004/0083794).

Regarding claim 1, Daniels et al. discloses a method (Fig. 8) of detecting an open secondary winding (18), comprising the steps of:

- enabling an integrator (245, 445, 450);
- resetting said integrator (Fig. 24);
- detecting an ionization voltage (paragraph 0075, line 1);
- integrating said ionization voltage over a spark window (paragraph 0159, lines 4-6);

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- comparing said integrated ionization voltage with a threshold (paragraph 0159, lines 4-6);

- setting an open secondary flag (in 370) if said integrated ionization voltage is below said threshold (365, 370, Fig. 26).

Regarding claim 2, Daniels et al. discloses that said step of enabling an integrator comprises sending an open secondary detection enable flag signal (integration window, Fig. 24).

Regarding claim 4, Daniels et al. discloses a size of said spark window is between 300 microseconds and 3 milliseconds (290-292, Fig. 28).

Regarding claim 7, Daniels et al. discloses that said step of detecting an open secondary occurs during an ignition phase of an ionization signal (paragraph 0075, lines 1-3).

Regarding claim 10, Daniels et al. discloses a method of detecting an open secondary winding, comprising the step of measuring spark duration (paragraph 0158, lines 3-4).

Regarding claim 15, Daniels et al. discloses an open secondary winding detection apparatus (Fig. 24), comprising:

- an integrator (245) having an ionization signal input (output from 240), an enable input (integration window input), a reset input (reset input) and an output (output from 245);

- a comparator (260) having a first input (input from 250) operably connected to said output of said integrator (Fig. 24), a second input (255) operably connected to a threshold value (Fig. 24), and an output (output from 260).

Regarding claim 16, Daniels et al. discloses an open secondary detection enable flag signal (integration window) operably connected to said enable input of said integrator (Fig. 24).

Regarding claim 19, Daniels et al. discloses that said ionization signal input of said integrator is operably connected to an ionization current measuring circuit (paragraph 0078, lines 1-7).

Allowable Subject Matter

3. Claims 3, 5, 6, 8, 9, 11, 12, 17, 18, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 13 and 14 are allowed.

Reasons For Allowance

5. The combination or method as claimed wherein using a rising edge of an ignition charge pulse to reset said integrator (claims 3, 18, 20) or a powertrain control module sets said open secondary flag (claim 5) or calculating the threshold by multiplying a maximum ionization voltage by a spark window time, whereby an integrated value is calculated, and multiplying said integrated value by a percentage (claims 6, 8) or comparing an ionization signal with a first threshold; measuring the spark duration when said ionization signal is greater than said first threshold; comparing said spark duration with a second threshold; and setting an open secondary flag (claims 11, 12) or an arrangement of a controller and a timer between two comparators (claim 13) or a powertrain control module having an input operably connected to said output of said comparator and an output operably connected to said enable input of said integrator (claim 17) is not disclosed, suggested, or made obvious by the prior art of record.

Response to Arguments

6. Applicant's arguments filed on March 17, 2005 have been fully considered but they are not persuasive.

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With respect to the double patenting rejection of claim 10, Applicants argue that the disclosure of Daniels does not anticipate claim 10.

Examiner's position is that even though the claims of Daniels does not explicitly recite the preamble of claim 10, "... method of detecting an open secondary winding", Daniels in claim 3 anticipates the body of claim 10 by reciting "measuring a duration of spark". Thus, claim 3 of Daniels teaches the preamble of claim 10 since it teaches all the claimed limitations recited in the body of claim 10.

With respect to the 35 USC 102 rejections, Applicants argue that Daniels does not disclose "a method of detecting an open secondary winding".

Examiner's position is that Daniels teaches "a method of detecting an open secondary winding" because Daniels teaches all the limitations recited in the body:

Regarding claim 1, Daniels et al. discloses a method (Fig. 8) of detecting an open secondary winding (18), comprising the steps of:

- enabling an integrator (245, 445, 450);
- resetting said integrator (Fig. 24);
- detecting an ionization voltage (paragraph 0075, line 1);
- integrating said ionization voltage over a spark window (paragraph 0159, lines 4-6);

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- comparing said integrated ionization voltage with a threshold (paragraph 0159, lines 4-6);

- setting an open secondary flag (in 370) if said integrated ionization voltage is below said threshold (365, 370, Fig. 26).

Regarding claim 10, Daniels et al. discloses a method of detecting an open secondary winding, comprising the step of measuring spark duration (paragraph 0158, lines 3-4).

Regarding claim 15, Daniels et al. discloses an open secondary winding detection apparatus (Fig. 24), comprising:

- an integrator (245) having an ionization signal input (output from 240), an enable input (integration window input), a reset input (reset input) and an output (output from 245);

- a comparator (260) having a first input (input from 250) operably connected to said output of said integrator (Fig. 24), a second input (255) operably connected to a threshold value (Fig. 24), and an output (output from 260).

Further, the recitation of “detecting an open secondary winding” has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural

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limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Applicants further argue that Daniels does not disclose “setting an open secondary flag if said integrated ionization voltage is below said threshold”.

Examiner’s position is that the open secondary flag is defined in claim 1 to be a flag (or condition) that is set if said integrated ionization voltage is below said threshold. Daniel discloses a condition (365, 370, Fig. 26) being occurred if said integrated ionization voltage is below said threshold (paragraph 0160, lines 6-7). Thus, the condition (365, 370) is construed as an open secondary condition (or flag) since it is set if said integrated ionization voltage is below said threshold (paragraph 0160, lines 6-7).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P Nghiem whose telephone number is (571) 272-2277. The examiner can normally be reached on M-H.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MICHAEL NGHIEM
PRIMARY EXAMINER

Michael Nghiem

May 19, 2004